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best grade, which has been sterilized by heating, without unrolling, in the dry oven about four hours at 150° C., is unrolled and placed in a tin pail, the pail having been sterilized by rinsing in boiling water, and the culture poured over it. The cotton is thoroughly saturated with the culture solution, by pressing and squeezing it with the hands. It is then hung up in the culture room, where it is nearly free from foreign organisms, and allowed to dry, *drying taking place in twenty-four to forty-eight hours*. It is then stored in pasteboard boxes in the laboratory until ready for use. Other methods for inoculating and drying have been attempted, but thus far they have been unsuccessful."

In a recent repetition of our experiments in Petri dishes as detailed in Bulletin 270 it was found that the inoculated cotton under such circumstances becomes air dry in approximately twenty-four hours. Accordingly it is seen that the method of preparation employed by the Bureau of Plant Industry not only is practically identical with that employed by the commercial company above described, but also the rate of drying is practically the same as that in our Petri dish experiments in which the germs placed upon the cotton died promptly.

Our own examinations of the bureau cotton is limited to six packages. While the number of packages is small, it is significant that from none of these packages did we succeed in isolating a single specimen of *P. radiculicola* although some of the packages were repeatedly examined. Similar laboratory tests of a number of packages of bureau cotton were made at the agricultural experiment stations in Delaware and North Carolina with similar negative results. The results of pot and field tests at the agricultural experiment stations in Pennsylvania, Oklahoma, Georgia, Maine, New York (Cornell) and Wisconsin as published fail to show any well-marked results from the use of inoculated cotton furnished by the bureau. Two other stations, Michigan and Virginia, have kindly furnished us with a summary of like unpublished tests which are also negative.

Although such may exist it is a surprising

fact that thus far we have not learned of a single experiment conducted at one of the many state agricultural experiment stations where the inoculated cotton put out by the Bureau of Plant Industry has given good results.

The marked exception to this wide record of failure is furnished by Bulletin 71, Bureau of Plant Industry. When considering the favorable reports there presented we are forced to conclude that an explanation is to be looked for largely in the psychological, rather than in the biological, realm.

When we consider the methods of preparation, storage and shipment employed by the Bureau of Plant Industry as described by Sprague in connection with the data upon the effect of slow drying and moist air as given by Messrs. Kellerman and Beckwith, an utter failure of the bureau's cultures was the only result which could be logically expected.

H. A. HARDING.

NEW YORK AGRICULTURAL EXPERIMENT  
STATION, May 2, 1906.

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#### QUOTATIONS.

##### ZOOLOGICAL GARDENS AND SCIENTIFIC RESEARCH.

DR. GUSTAV LOISEL, who is a professor of zoology in the Sorbonne, is making persistent efforts to have the menagerie in the Jardin des Plantes adapted to the needs of experimental science. He would have it so transformed as to become a school of zoological research without at the same time ceasing to be a place of entertainment for the people. Such a plan has been partly carried out in Bronx Park, so that certain fauna are permitted to live and breed almost as if they were in 'the wild.' The experimental stations in this country where marine animals and plants may be studied have proved of the highest value to science; and the laboratory in connection with the Naples Aquarium has long been a favorite resort for naturalists. Two of Dr. Loisel's suggestions are not likely to meet with popular approval. One is to do away altogether with the monkey house, which he says is infected with tuberculosis, and the other is to diminish the number of the more formidable wild animals to make room for beasts whose habits

may be more conveniently studied. But in general there is no good reason why the zoological collections of the world should not be adapted to the needs of students of natural history who should have advantages analogous to those already enjoyed by workers in botany and in the fine arts.—*The N. Y. Evening Post*.

#### THE WILL OF ALFRED BEIT.

THE public bequests made by Alfred Beit, who died on July 16, were made public in London on July 20, and have been cabled to this country.

The most notable bequest is \$6,000,000 to his partners to constitute a fund, the income of which is to be devoted to the construction, equipment or furtherance of any such methods of communication or transportation in Rhodesia, Portuguese Southeast Africa or the German possessions, and any parts of Africa that may be traversed by the Cape-to-Cairo Railway. The trustees are to have absolute discretion, and if two thirds decide that the fund is no longer required for furthering the work of communication or transportation, they can apply the proceeds to educational, charitable or other public purposes in Rhodesia.

One million dollars is left to the University of Johannesburg to build and equip buildings on the land previously given by Mr. Beit; one million dollars for educational or charitable purposes in Rhodesia and other territories within the field of the British South Africa Company; \$125,000 to the Rhodes University, Grahamstown, Cape Colony; \$100,000 for educational or charitable purposes in the Transvaal, and \$75,000 for similar purposes in Kimberley and in Cape Colony.

To the College of Technology, London University, the sum of \$250,000 and 1,000 shares in the DeBeers Company are bequeathed, and to the research fund of London University \$125,000.

Two hundred thousand dollars is to be distributed equally in London and Hamburg for educational or charitable purposes. To King's Hospital and Guy's Hospital, London, the sum of \$100,000 each is given. Mr. Beit's

property near Hamburg, which was his birthplace, is left to that city, and his art collections are left to the galleries in London, Berlin and Hamburg.

#### SCIENTIFIC NOTES AND NEWS.

THE Lavoisier medal of the Chemical Society of Paris and the Hofmann medal of the German Chemical Society are to be presented to Dr. W. H. Perkin, on the occasion of the celebration this week of the jubilee of the coal-tar industry.

THE eightieth birthday of Dr. Georg von Neumayer, late director of the Deutsche Seewarte, which occurred on June 21, was celebrated at Neustadt, where he now lives. An address was presented by Dr. S. Günther, of Munich. It is proposed to establish a foundation for the encouragement of research by geographical students, and arrangements may be made for the painting of a portrait of Dr. Neumayer, to be placed in the Historical Museum at Speier.

Professor Carl Vogel, director of the Astrophysical Observatory at Potsdam, has been elected a correspondent of the Paris Academy of Sciences, in succession to the late Dr. S. P. Langley.

PROFESSOR JULIUS FRANZ, director of the Breslau Observatory, has been elected an associate of the Royal Astronomical Society.

DR. EMIL FISCHER, professor of chemistry at Berlin; Dr. Stanislao Canizzaro, professor of chemistry at Rome, and Dr. Daniel Oliver, lately keeper of the herbarium of the Royal Botanical Gardens, Kew, have been elected foreign members of the Royal Society of New South Wales.

A NUMBER of foreign scholars and men of science have been invited to take part in the opening of the main building of the Carnegie Institute, Pittsburg, in April next. Among those who have accepted are Sir William Huggins and Sir William Preece.

MR. S. F. EMMONS, geologist of the U. S. Geological Survey, in charge of the section of metalliferous deposits, will personally supervise investigations made this summer by members of the survey in various mining re-